THIS OPINION WAS NOT WRITTEN FOR PUBLICATION

The opinion in support of the decision being entered today (1) was not written for publication in a law journal and (2) is not binding precedent of the Board.

Paper No. 21

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

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Ex parte NORIYUKI YAMAUCHI

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Appeal No. 95-3362
Application 08/009,200[1]

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HEARD: JULY 15, 1997

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Before THOMAS, HAIRSTON and FLEMING, ***Administrative Patent Judges***.

FLEMING, ***Administrative Patent Judge***.

DECISION ON APPEAL

This is a decision on appeal from the final rejection of claims 1 through 8, all of the claims pending in the present application.

[1] Application for patent filed January 26, 1993.

The invention relates to a cogeneration system. In particular, Appellant discloses on page 5 of the specification and illustrates in Figure 1 a cogeneration system having an electric heater 7 connected to an output terminal of generator 2 driven by heat engine 1. Appellant discloses on pages 7 through 10 the operation of the cogeneration system as illustrated by flow chart 3. Appellant discloses that power supplied to electric heater 7 is controlled by expression (3) found on page 9 of the specification. Appellant discloses that for this embodiment it is assumed that an output of generator 2 is proportional to a heat quantity recovered by heat load 5 from the heat engine 1 as shown in Figure 2. Appellant discloses that this relationship is stored in memory 102 of the computer. Appellant discloses a second embodiment on pages 10 through 12 where a fuel cell 15 is provided in place of heat engine 1 and generator 2 shown in Figure 1.

The independent claims 1 and 5 are reproduced as follows:

1. A cogeneration system including a generator driven by a heat engine, an external electric power load connected to said generator, and a heat load whose heat source is waste heat generated from said heat engine, comprising:

detecting means for detecting a load value of said external electrical power load;

heat generating means powered by said generator for generating heat and supplying the generated heat to said heat load; and

controlling means for controlling said heat generating means according to the load value of said external electrical power load detected by said detecting means,

said controlling means comprising

storing means for storing information indicating a relation between a load value of said generator and a heat quantity recovered by said heat load from said heat engine, and

calculating means for calculating electrical power to be consumed by said heat generating means based on the relation stored in said storing means, so that the sum of heat quantities recovered by said heat load from waste heat of said heat engine and from generated heat of said heat generating means is a predetermined value, in response to said external electrical power load being a small load value and a heat quantity recovered by said heat load from said heat engine being less than the predetermined value.

5. A cogeneration system including a fuel cell, an external electric power load connected to said fuel cell, and a heat load whose heat source is waste heat generated by said fuel cell, comprising:

detecting means for detecting a load value of said external electrical power load;

heat generating means powered by said fuel cell for generating heat and supplying the generated heat to said heat load; and

controlling means for controlling said heat generating means according to the load value of said external electrical power load detected by said detecting means,

said controlling means comprising

storing means for storing information indicating a relation between a load value of said fuel cell and a heat quantity recovered by said heat load from said fuel cell, and

calculating means for calculating electric power to be consumed by said heat generating means based on the relation stored in said storing means, so that the sum of heat quantities recovered by said heat load from waste heat of said fuel cell and from generated heat of said heat generating means is a predetermined value, in response to said external electric power load being a small load value and a heat quantity recovered by said heat load from said fuel cell being less than the predetermined value.

The Examiner relies on the following reference:

Aasen et al. (Aasen) 4,802,100 Jan. 31, 1989

Claims 1 through 8 stand rejected under 35 U.S.C. § 103 as being unpatentable over Aasen.

Rather than reiterate the arguments of Appellant and the Examiner, reference is made to the briefs[2] and answer for the respective details thereof.

OPINION

We will not sustain the rejection of claims 1 through 8 under 35 U.S.C. § 103.

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[2] Appellant filed an appeal brief on September 6, 1994. We will refer to this appeal brief as simply the brief. Appellant filed a reply appeal brief on December 5, 1994. We will refer to this reply appeal brief as the reply brief. The Examiner stated in the Examiner's letter dated January 18, 1995 that the reply brief has been entered and considered but no further response by the Examiner is deemed necessary.

The Examiner has failed to set forth a ***prima facie*** case of obviousness. It is the burden of the Examiner to establish why one having ordinary skill in the art would have been led to the claimed invention by the express teachings or suggestions found in the prior art, or by implications contained in such teachings or suggestions. ***In re Sernaker***, 702 F.2d 989, 995, 217 USPQ 1, 6 (Fed. Cir. 1983). "Additionally, when determining obviousness, the claimed invention should be considered as a whole; there is no legally recognizable 'heart' of the invention." ***Para-Ordnance Mfg. v. SGS Importers Int'l, Inc.***, 73 F.3d 1085, 1087, 37 USPQ2d 1237, 1239 (Fed. Cir. 1995), ***citing W. L. Gore & Assocs., Inc. v. Garlock, Inc.***, 721 F.2d 1540, 1548, 220 USPQ 303, 309 (Fed. Cir. 1983), ***cert. denied***, 469 U.S. 851 (1984).

Appellant argues on pages 19 through 22 of the brief that Aasen, fails to teach or suggest a separate heat source powered by the power source (i.e. the generator/heat engine or fuel cell) or the controlling means as recited in Appellant's claims 1 and 5. In particular, Appellant argues that Aasen fails to teach a heat generating means powered by the generator for supplying heat to the heat load and controlling means including a storing means for storing information indicating a relation between a load

value for the generator and a heat quantity recoverable from the heat engine by the heat load and a calculating means which, in response to too small a load value being detected from an external electrical power load and the heat quantity recoverable from the heat engine by the heat load being less than a predetermined value, calculates, based upon the stored relationship, the electric power to be consumed by the heat generating means so that the sum of heat quantities recoverable by the heat load from the heat engine and the heat generating means is equal to the predetermined value as recited in Appellant's claim 1. Appellant further argues that Aasen fails to teach a heat generating means powered by the fuel cell for supplying heat to the heat load and controlling means including a storing means for storing information indicating a relation between a load value for the fuel cell and a heat quantity recoverable from the fuel cell by the heat load and a calculating means which, in response to too small a load value being detected from an external electrical power load and the heat quantity recoverable from the fuel cell by the heat load being less than a predetermined valve, calculates, based upon the stored relationship, the electric power to be consumed by the heat generating means so that the sum of heat quantities recoverable

by the heat load from the fuel cell and the heat generating means is equal to the predetermined value as recited in Appellant's claim 5.

In particular, Appellant argues on page 25 of the brief and page 4 of the reply brief that claims 1 and 5 recite a feed forward control system from the standpoint of the heat load. Appellant argues that the claimed invention does not control the heat generation based upon detection of a change in the heat load as taught by Aasen, but rather the claimed invention detects the decreased electric power load and controls the electric heater so as to adjust the sum of output heat from the electric heater and the heat engine.

After a careful review of Aasen, we fail to find that Aasen teaches any of the above means as claimed by Appellant. Aasen teaches in column 4, lines 4-22, a cogenerated system 10 having a auxiliary heating unit 20 as shown in Figure 1. We note that Figure 1 does not show that the auxiliary heating unit 20 is powered by the electrical generator 20. Furthermore, we find that Aasen in column 11, lines 5-6, and column 16, line 40 through column 17, line 22, discloses that the demand for heat is determined when sensor S34 is closed sensing that there is a demand for heat at the heating load. Therefore, Assen fails to

teach a detecting means, controlling means comprising a storing means and a calculating means to provide a feed-forward control of the heat load as recited in Appellant's claims 1 and 5.

The Examiner argues on page 4 of the answer that it would have been obvious to one of ordinary skill in the art to power the load from the auxiliary generator rather than the public utility. Appellant responds in the reply brief that Aasen does not suggest powering the auxiliary heat unit 20 with the generator 12 nor does Aasen suggest linking the generator 12 and the auxiliary heater 20 and controlling the same such that the electrical and heat loads would be balanced with the system, thereby eliminating the need for the hook-up to power grid as taught by Aasen.

The Federal Circuit states that "[t]he mere fact that the prior art may be modified in the manner suggested by the Examiner does not make the modification obvious unless the prior art suggested the desirability of the modification." ***In re Fritch***, 972 F.2d 1260, 1266 n.14, 23 USPQ2d 1780, 1783-84 n.14 (Fed. Cir. 1992), ***citing In re Gordon***, 733 F.2d 900, 902, 221 USPQ 1125, 1127 (Fed. Cir. 1984). "Obviousness may not be established using hindsight or in view of the teachings or suggestions of the inventor." ***Para-Ordnance Mfg. v. SGS Importers Int'l***, 73 F.3d at

1087, 37 USPQ2d at 1239, ***citing W. L. Gore & Assocs., Inc. v. Garlock, Inc.***, 721 F.2d at 1551, 1553, 220 USPQ at 311, 312-13. Upon reviewing Aasen, we fail to find any suggested desirability of modifying the Aasen system as recited in Appellant's claims 1 through 8.

We have not sustained the rejection of claims 1 through 8 under 35 U.S.C. § 103. Accordingly, the Examiner's decision is reversed.

REVERSED

JAMES D. THOMAS Administrative Patent Judge	)
KENNETH W. HAIRSTON Administrative Patent Judge	) BOARD OF PATENT) APPEALS) AND) INTERFERENCES
MICHAEL R. FLEMING Administrative Patent Judge	)

Appeal No. 95-3362
Application 08/009,200

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